CLAIMS

1. A signal processing system for a construction machine
comprising a prime mover (10), a variable displacement
hydraulic pump (1, 2) driven by said prime mover, a fuel
injection device (14) for controlling fuel injection in said
prime mover, input means (71) for commanding a target
revolution speed of said prime mover, revolution speed
detecting means (72) for detecting an actual revolution
speed of said prime mover, fuel injection control means
(70B, 70Ba) for controlling a fuel injection state of said
fuel injection device in accordance with the target
revolution speed commanded from said input means and the
actual revolution speed detected by said revolution speed
detecting means, and pump torque control means (7, 8, 32,
70A, 70Aa) for controlling a maximum absorption torque of
said hydraulic pump in accordance with the target revolution
speed commanded from said input means and the actual
revolution speed detected by said revolution speed detecting
means, wherein said signal processing system further
comprises:

a plurality of environment detecting means (75-83) for
detecting status variables related to environments of said
prime mover (10) or said hydraulic pump (1, 2) and
outputting respective corresponding detected environment
signals;

environment modifying means (70Ab, 70i, 70Bb, 70x1-
70x4) for receiving the detected environment signals and

modifying, in accordance with the detected environment
signals, at least one of the fuel injection state of said
fuel injection device (14) controlled by said fuel injection
control means (70B, 70Ba) and the maximum absorption torque
of said hydraulic pump controlled by said pump torque
control means (7, 8, 32, 70A, 70Aa);

communication control means (70C) for obtaining, from
an external terminal (150) via communication, alteration
data for altering one or more computation elements contained
in at least one of said fuel injection control means, said
pump torque control means and said environment modifying
means; and

computation element altering means (171, 181) for
altering the computation elements based on the alteration
data obtained by said communication control means.

2.   A signal processing system for a construction machine
according to Claim 1, wherein:

said environment modifying means is pump torque
modifying means (70Ab, 70i) for modifying the maximum
absorption torque of said hydraulic pump (1, 2), which is
controlled by said pump torque control means (7, 8, 32, 70A,
70Aa), in accordance with the detected environment signals
by using a predetermined computation element for torque
modification; and

said communication control means (70C) is means for
obtaining, from said external terminal (150), alteration
data for altering the computation element for torque

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modification, and said computation element altering means
(171) is means for altering the computation element for
torque modification based on the obtained alteration data.

3.   A signal processing system for a construction machine
according to Claim 1, wherein:

said environment modifying means is fuel injection
modifying means (70Bb, 70x1-70x4) for modifying the fuel
injection state of said fuel injection device (14), which is
controlled by said fuel injection control means (70B, 70Ba),
in accordance with the detected environment signals by using
a predetermined computation element for injection
modification; and

said communication control means (70C) is means for
obtaining, from said external terminal (150), alteration
data for altering the computation element for injection
modification, and said computation element altering means
(181) is means for altering the computation element for
injection modification based on the obtained alteration
data.

4.   A signal processing system for a construction machine
according to Claim 1, wherein:

said environment modifying means includes pump torque
modifying means (70Ab, 70i) for modifying the maximum
absorption torque of said hydraulic pump, which is
controlled by said pump torque control means, in accordance
with the detected environment signals by using a

predetermined computation element for torque modification, and fuel injection modifying means (70Bb, 70x1-70x4) for modifying the fuel injection state of said fuel injection device, which is controlled by said fuel injection control means, in accordance with the detected environment signals by using a predetermined computation element for injection modification; and

said communication control means (70C) is means for obtaining, from said external terminal (150), alteration data for altering the computation element for torque modification and the computation element for injection modification, and said computation element altering means (171, 181) are means for altering the computation element for torque modification and the computation element for injection modification based on the obtained alteration data.

5. A signal processing system for a construction machine according to Claim 1, wherein:

said pump torque control means (7, 8, 32, 70A, 70Aa) is means for controlling the maximum absorption torque of said hydraulic pump (1, 2) based on the target revolution speed and the actual revolution speed by using a predetermined computation element for torque control; and

said communication control means (70C) is means for obtaining, from said external terminal (150), alteration data for altering the computation element for torque control, and said computation element altering means (171)

is means for altering the computation element for torque control based on the obtained alteration data.

6.   A signal processing system for a construction machine according to Claim 1, wherein:

said fuel injection control means (70B, 70Ba) is means for controlling the fuel injection state of said fuel injection device (14) based on the target revolution speed and the actual revolution speed by using a predetermined computation element for injection control; and

said communication control means (70C) is means for obtaining, from said external terminal (150), alteration data for altering the computation element for injection control, and said computation element altering means (181) is means for altering the computation element for injection control based on the obtained alteration data.

7.   A signal processing system for a construction machine according to Claim 1, wherein:

said pump torque control means (7, 8, 32, 70A, 70Aa) is means for controlling the maximum absorption torque of said hydraulic pump (1, 2) based on the target revolution speed and the actual revolution speed by using a predetermined computation element for torque control;

said fuel injection control means (70B, 70Ba) is means for controlling the fuel injection state of said fuel injection device (14) based on the target revolution speed and the actual revolution speed by using a predetermined

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computation element for injection control; and

said communication control means (70C) is means for
obtaining, from said external terminal (150), alteration
data for altering the computation element for torque control
and the computation element for injection control, and said
computation element altering means (171, 181) are means for
altering the computation element for torque control and the
computation element for injection control based on the
obtained alteration data.

8.   A signal processing system for a construction machine
according to Claim 1, wherein:

said signal processing system further comprises
information collecting means (172, 182) for collecting
various items of information including the detected
environment signals from said environment detecting means
(75-83); and

said communication control means (70C) outputs the
various items of information obtained by said information
collecting means to said external terminal (150) via
communication.

9.   A signal processing system for a construction machine
according to Claim 8, wherein:

said signal processing system further comprises
operation detecting means (73-1, 73-2, 84-1, 84-2) for
detecting status variables related to the operating state of
said prime mover (10) or said hydraulic pump (1, 2) and

outputting corresponding detected signals; and

said information collecting means (172, 182) is means for collecting various items of information including the detected environment signals from said environment detecting means (75-83) and detected operation signals from said operation detecting means.

10. A signal processing system for a construction machine according to any one of Claims 1 to 9, wherein said communication control means (70C) performs communication with respect to said external terminal (150) via a communication line.

11. A signal processing system for a construction machine according to any one of Claims 1 to 9, wherein said communication control means (70C) performs communication with respect to said external terminal (150) in a wireless manner.

12. A signal processing system for a construction machine according to Claim 1, wherein said environment detecting means (75-83) are means for detecting at least one of environment factors including an intake pressure, an intake temperature, an exhaust temperature, an exhaust pressure, a cooling water temperature, a lubricant pressure and a lubricant temperature of said prime mover, an atmospheric pressure, a fuel temperature, and a hydraulic fluid temperature.